



Impact of COVID on Medicare Fee-for-Service Beneficiaries with Dementia

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1

Background

- People with dementia are more likely to be in populations at risk for severe disease/mortality from COVID:
 - Older age
 - Multiple chronic conditions
 - Need for personal care
 - Nursing home residence
 - Non-White

2

Methods

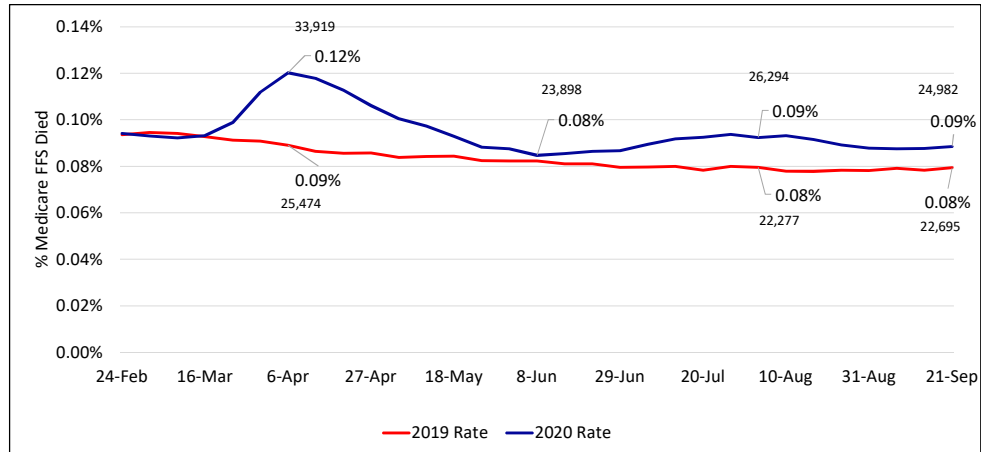
- Acumen analyzed Medicare FFS claims and other administrative data from the start of the pandemic through September 27, 2020
- 28 million fee-for service (FFS) Medicare beneficiaries from the weeks of February 28 to August 2, 2020. Approximately 45% of Medicare beneficiaries. Did not include
 - Nearly 25 million beneficiaries enrolled in the MA
 - 7 million FFS beneficiaries not enrolled in Part B or without a claim in 14 months prior to February
- Outcomes: COVID diagnosis, all-cause mortality, and mortality following COVID diagnosis.
- Compared rates of mortality between 2019 and 2020, adjusted for FFS enrollment
- Multivariate Analyses: Two-part logistic regression model that controlled for demographic characteristics, nursing home residence, type of eligibility (e.g., dual eligible), chronic health conditions, obesity, number of chronic conditions

3

Results

4

Weekly All-Cause Mortality Rate in 2020 vs. 2019 for All FFS Beneficiaries

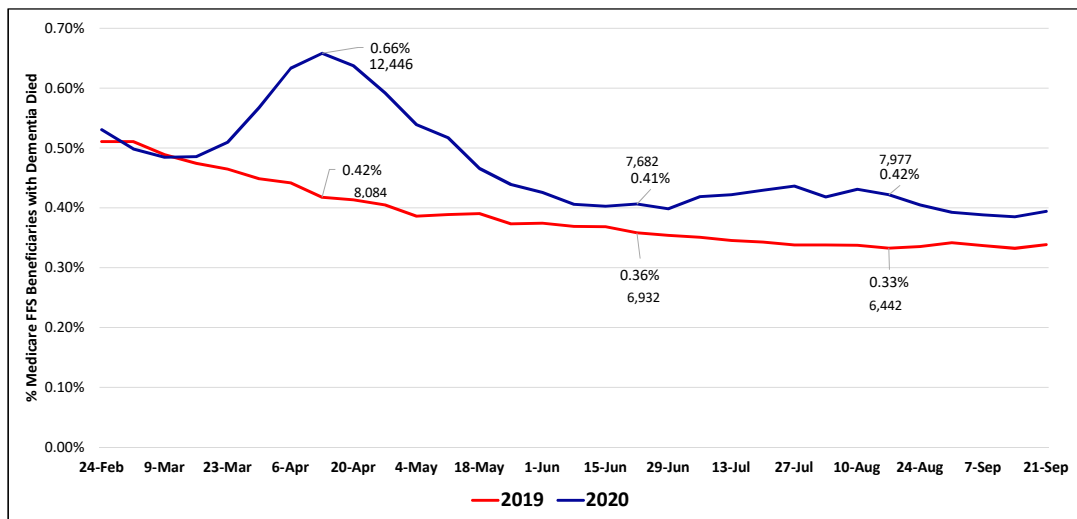


Source: Acumen analysis of Medicare FFS claims, deaths between Feb 24 and September 27, 2020

5

5

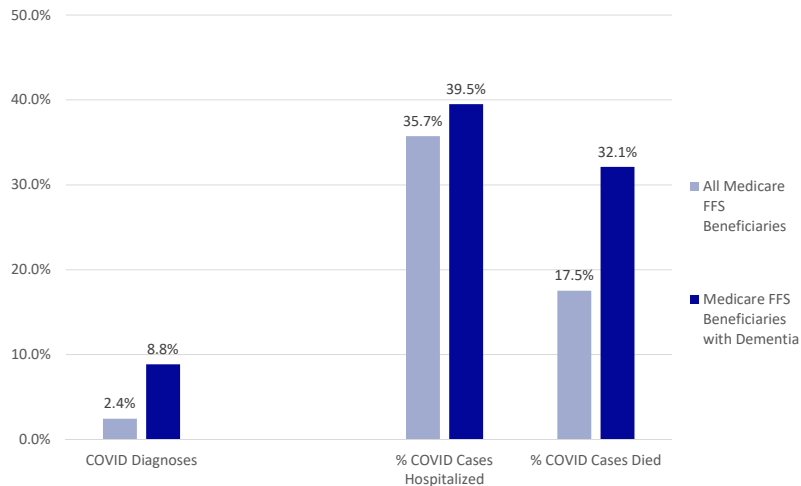
Weekly All-Cause Mortality Rate in 2020 vs. 2019 for FFS Beneficiaries with Dementia



Source: Acumen analysis of Medicare FFS claims, deaths between Feb 24 and September 27, 2020

6

COVID Infection Rates and Percentage of COVID patients Hospitalized and Died, by Dementia Status



1.8 million Medicare FFS beneficiaries with dementia

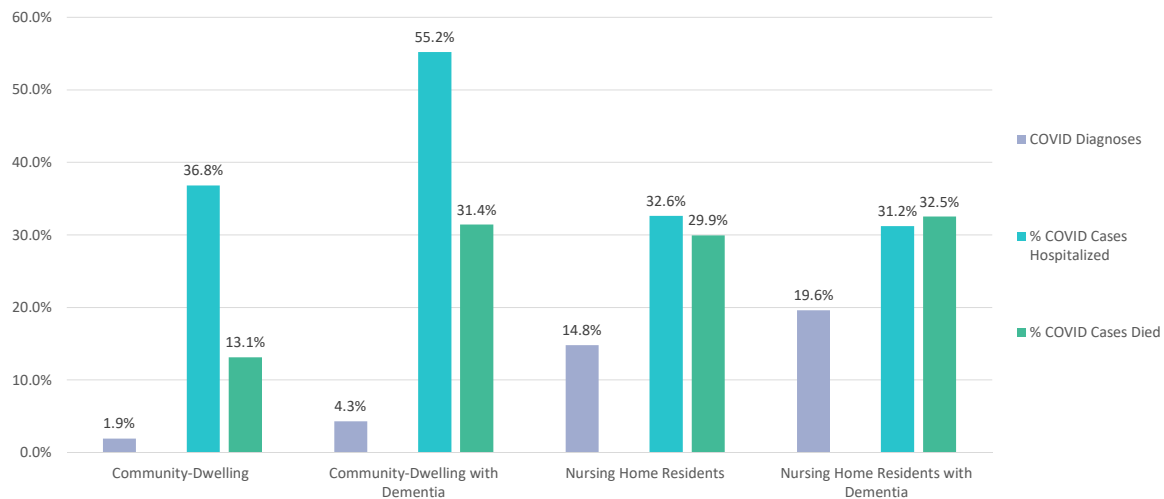
- 166,485 (8.8%) diagnosed with COVID
- 65,738 (40%) hospitalized
- 53,490 (32%) died

Source: Acumen analysis of Medicare FFS claims, deaths between Feb 24 and September 27, 2020

7

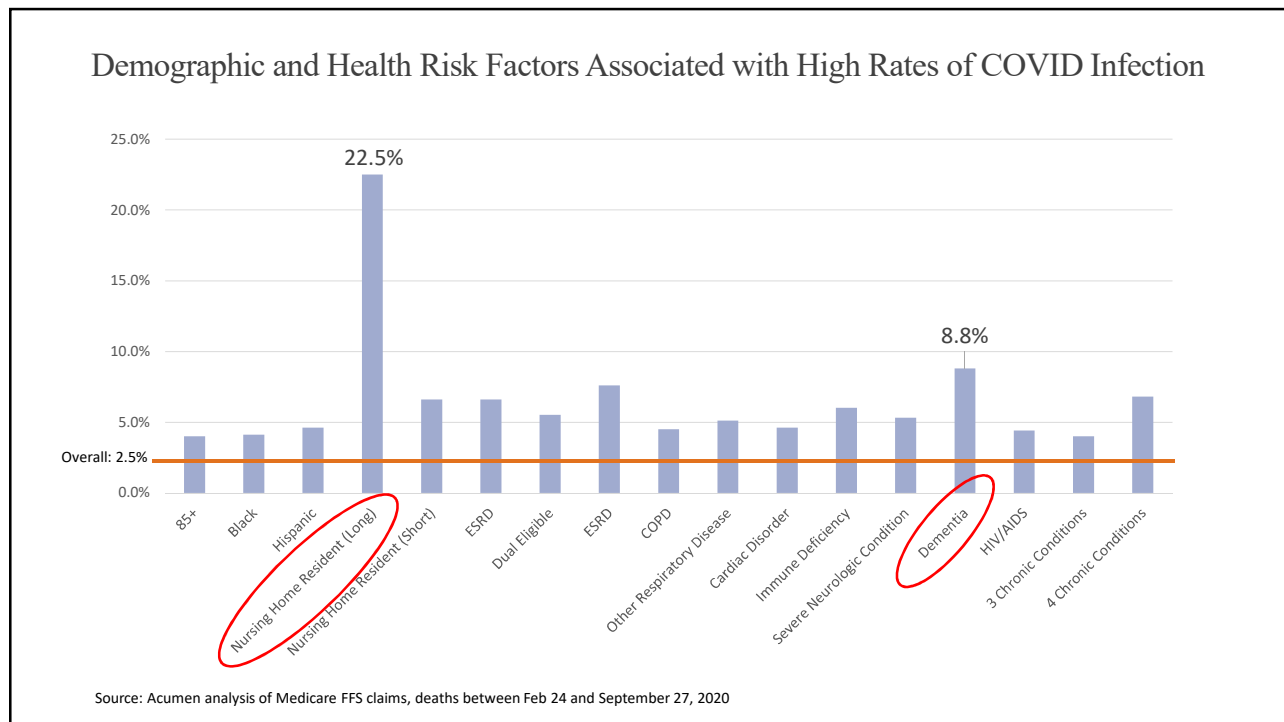
7

COVID Infection Rates and Percentage of COVID patients Hospitalized and Died, by Dementia Status and NH Residency

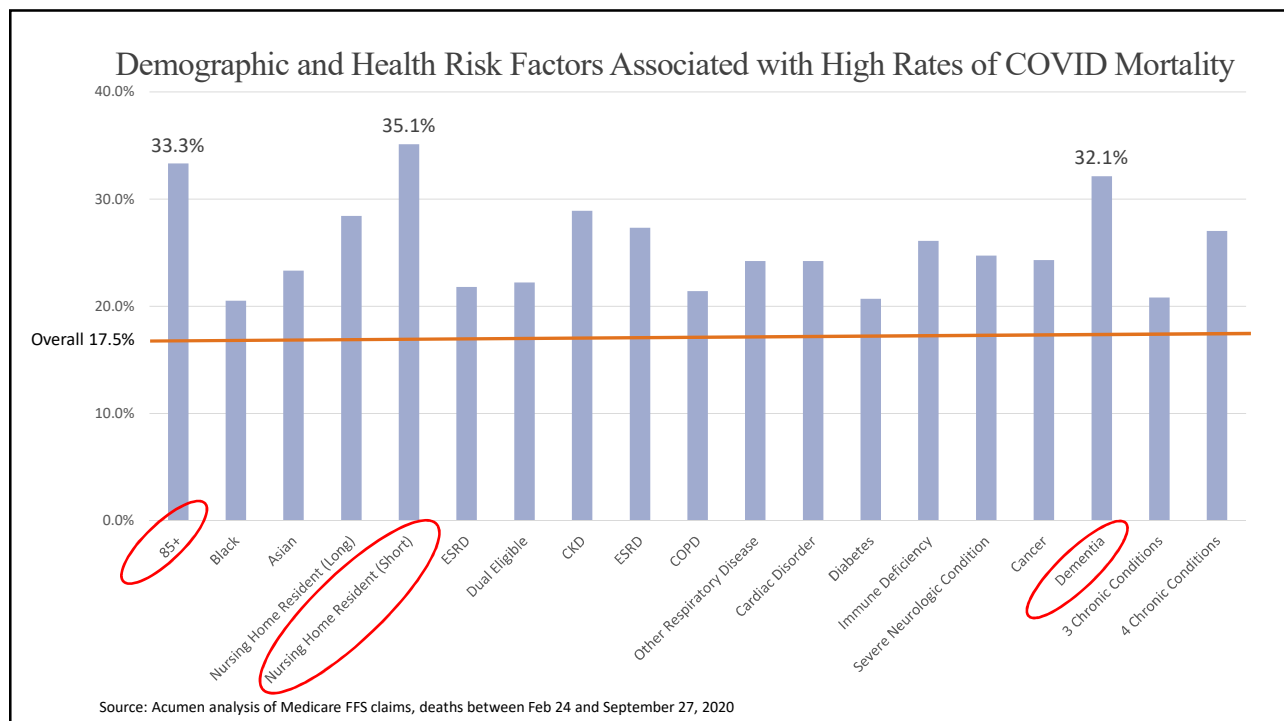


Source: Acumen analysis of Medicare FFS claims, deaths between Feb 24 and September 27, 2020

8

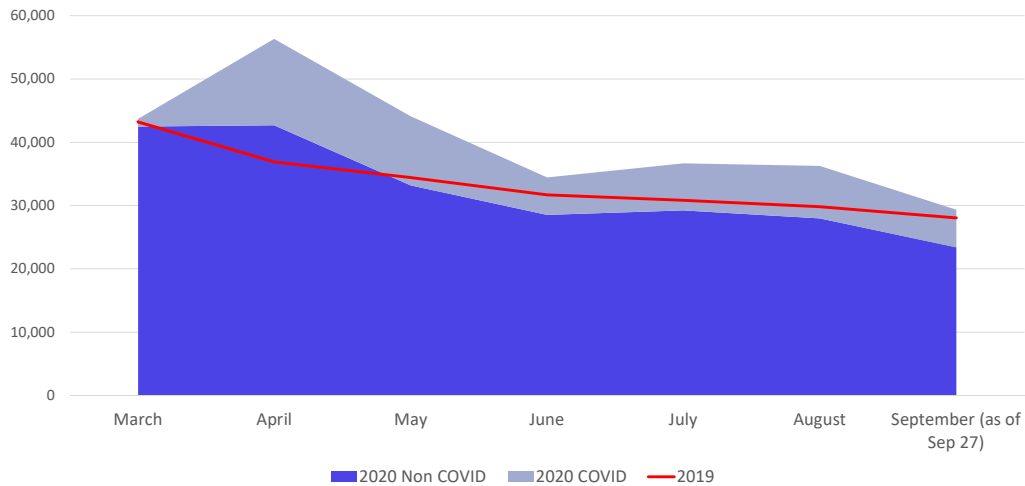


9



10

Monthly Mortality Among Beneficiaries with Dementia: 2019 vs. 2020 COVID and Non-COVID



Source: Acumen analysis of Medicare FFS claims, deaths between Feb 24 and September 27, 2020

11

Multivariate Analyses: Observed and Independent Risk Factors for COVID-19 Infection & Death

Variable	Independent Risk of COVID-19 Infection (Odds Ratio)	Independent Risk of Death If COVID Infected (Odds Ratio)
Male (ref: Female)	1.1	1.6
Black (ref: White)	1.2	1.2
Hispanic	1.5	1.1
Other Non-white	0.9	1.2
Long-term Nursing Home (ref: non-nursing)	9.7	1.2
Short Term Nursing Home	3.2	1.8
Dual (ref: Medicare only)	1.5	1.2
Aged - Original Reason for Medicare	0.7	0.7
Disabled (ref: ESRD original reason)	0.8	0.8
Age 65-74 (ref: <65)	1.1	1.7
Age 75-84	1.1	3.2
Age 85+	1.3	6.0
CKD (ref: does not have the condition)	1.0	1.4
ESRD	1.5	1.6
COPD	1.0	1.1
Other Respiratory Disease	1.0	1.1
Cardiac Disorder	1.0	1.0
Diabetes	1.0	1.1

Source: Acumen analysis of Medicare FFS claims, deaths between Feb 24 and September 27, 2020

Note: Independent risk comes from two-part logistic regression models with random effects at FIPS11/FIPS7; includes all factors listed in this table and next slide

12

Multivariate Analyses: Observed and Independent Risk Factors for COVID-19 Infection & Death

Variable	Independent Risk of COVID-19 Infection (Odds Ratio)	Independent Risk of Death If COVID Infected (Odds Ratio)
Immune Deficiency	1.0	1.1
Severe Neurologic Condition	1.0	1.1
Cancer (other)	0.9	1.2
Breast/Prostate Cancer	0.8	0.8
Hypertension	0.9	0.8
Dementia (incl. Alzheimer's)	1.5	1.6
HIV/AIDS	0.9	0.9
Obesity	1.1	1.1
1 Comorbid Condition (ref: 0 conditions)	1.7	1.2
2 Comorbidities	2.3	1.5
3 Comorbidities	2.7	1.6
4+ Comorbidities	3.1	1.6
CDC SVI - Socioeconomic Status	1.1	1.1
CDC SVI - Household Composition & Disability	0.9	1.0
CDC SVI - Minority Status & Language	2.2	1.2
CDC SVI - Housing Type & Transportation	0.8	0.9
Population Density (log)	1.1	1.0

Source: Acumen analysis of Medicare FFS claims, deaths between Feb 24 and September 27, 2020

Note: Independent risk comes from two-part logistic regression models with random effects at FIPS11/FIPS7; includes all factors listed in this table and previous slide

13

Multivariate Analyses

- Raw risk for infection (4.8) and mortality (3.2) among people with dementia are very high
- After controlling for all other factors, risk for infection (1.5) and mortality (1.6) are still significantly higher for people with dementia
- BUT other characteristics associated with an even higher risk for:
 - Infection: NH residence (long or short stay) and 4+ comorbidities
 - COVID mortality: Age 85+
- Dementia alone increases risk somewhat, but many correlated characteristics (NH residence, multiple chronic conditions, and advanced age) make people with dementia very high risk

14

Shortcomings

- Results only reflect data through September 27, 2020
- Identification of dementia in Medicare claims is inconsistent and over/under represents certain populations
- Only reflects 45% of Medicare population

15

Conclusions

- Significant impact of COVID on Medicare FFS beneficiaries with dementia
 - Very high infection rates
 - Very high mortality
- May be excessive non-COVID mortality, but timing (April) raises questions about causes
- Controlling for other factors, multivariate analyses show:
 - Strongest predictors of:
 - Infection: NH residence and 4+ comorbidities
 - COVID mortality: Age 85+
 - Risk for infection (1.5) and mortality (1.6) are still significantly higher than people without dementia

16

Questions?

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